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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/648,772 | 08/25/2003 | Tatsuya Takahashi | 81784.0280 | 4048 |

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| EXAMINER |
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PRABHAKHER, PRITHAM DAVID

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| ART UNIT | PAPER NUMBER |
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2622

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 03/07/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | |
|------------------------------|--------------------------------|----------------------------------|--|
| Office Action Summary | Application No. 10/648,772 | Applicant(s) TAKAHASHI ET AL. | |
| | Examiner Pritham Prabhakher | Art Unit 2622 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-16 is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 5-11, 17 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to because *CP in Figure 3c should be labeled SC*.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 7 is objected to because of the following informalities:

The word "clam" should be corrected to the word "clamping."

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Sato

(US Patent No.: 6580465B1).

*Regarding **Claim 1**, Sato teaches of an image capturing device, comprising:*

*a solid image capturing element (Image sensor 20 in **Figure 1**);*

*a driving circuit for driving the solid image capturing element to obtain an image signal (Generator 10 functions as a driving circuit for capturing an image, **Figure 1 and Column 3, Lines 13-15**);*

*a clamping circuit for clamping a reference level of the image signal generated by the solid image capturing element at a predetermined level (The clamp circuit 40 clamps a predetermined portion of the image signal input into the clamp circuit 40, **Column 3, Lines 18-23**); and*

a control circuit for controlling clamping capability of the clamping circuit (Claim^{mp} level adjusting circuit 90 controls the clamping capability of the clamp circuit 40, **Figure 1**).

In regard to **Claim 2**, Sato teaches of the device according to claim 1, wherein the control circuit controls such that a clamping capability attained within a predetermined period after start of image capturing by the solid image capturing element becomes different from a clamping capability attained in another period (Wave (e) in Figure 3 shows the clamp voltage outputted from the clamp voltage adjusting circuit 90 (control circuit) that is input into the clamp circuit 40 to control it. Figure 3e shows that the clamping voltage from S11 to S31 (one period) is different from S31 to S50 (second period), therefore, the clamping capability of the clamp circuit 40 is also different, **Figure 3 and Column 5, Lines 10-12**).

With regard to **Claim 3**, Sato teaches of the device according to claim 2, wherein the control circuit controls such that the clamping capability within a predetermined period after start of image capturing (both periods mentioned above in claim 2 fall under this category) by the solid image capturing element becomes higher in level than the clamping capability attained in another period (The period from S31 to S50 has a higher level in clamping capability than the period from S11 to S31, **Figure 3 and Column 5, Lines 52-53**).

Regarding **Claim 4**, Sato teaches of the device according to claim 2, wherein the control circuit controls such that the clamping circuit operates longer within a predetermined period after start of image capturing by the solid image capturing

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*element than in another period (The clamping circuit operates longer between the periods of S31 and S40 than S30 and S31, **Figure 3**).*

Allowable Subject Matter

Claims 5-11, 17 and 18 are objected to as being dependent upon a rejected base claim 1, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 12-16 are allowed.

*In regard to **Claim 12**, the prior art fails to teach or reasonably suggest, "An image capturing device, comprising: a solid image capturing element; a driving circuit for driving the solid image capturing element to obtain an image signal; a clamping circuit for clamping a reference level of the image signal generated by the solid image capturing element at a predetermined level; a control circuit for controlling such that a clamping capability attained within a predetermined period after start of image capturing by the solid image capturing element becomes different from a clamping capability attained in another period; and*

a detection circuit for measuring an inoperative period during which the solid image capturing element suspends image capturing, wherein the control circuit controls such that the clamping capability within a predetermined period after start of image capturing by the solid image capturing element becomes

higher in level than the clamping capability attained in another period, and controls such that the clamping capability becomes higher in level with respect to a longer inoperative period".

Regarding **Claims 13-16**, these claims are allowed as being dependent from allowed independent claim 12.

The following are the closest references found:

Funakoshi et al. (US Patent No.: 7061531B2) teaches of "An imaging device that uses a solid state imaging element, during multi-field accumulation to prevent shading and oscillatory phenomena such as repeated black and white patterns. A signal is supplied from a timing signal generation circuit to switches, and controls the ON/OFF operation. During the H period of the signal, the switch is closed, and the output value of an amplifier is input to a capacitor. During the L period of the signal, the switch is opened, and the average value of the output of the amplifier is maintained in the capacitor. During the H period, the switch is open, while during the L period, the switch is in the ON state. At this time, the level of the capacitor C2 and the output of the amplifier are input to an amplifier, and their difference is amplified and supplied to a capacitor C3 via the switch".

Yoshihara et al. (US Patent No.: 6480228B1) teaches of "When a signal output by a solid-state image sensing device is clamped to a predetermined reference potential, a high voltage generated in a transfer suspension period after the clamping is

generally supplied to an A/D converter as generated. A sample/hold output V_a is clamped to a clamp level V_{ref} over a period of time between a halfway point of time of a signal of a picture element preceding ahead by one line and the end of an inhibit period of transfer clocks of a signal output by an empty transmission unit via a first clamp pulse and a sample/hold output for the second picture element, or a subsequent one of an OPB unit is clamped to the clamp level via a second clamp pulse to prevent a signal output from exceeding a reference voltage from being supplied to an A/D converter at a later stage".

Abe (US Patent No.: 6700609B1) teaches of "An optical black portion in an output of a CCD image pickup device that is extracted and a clamp level of each line that is obtained by an integrating and averaging circuit. A difference value of the clamp levels between the front and rear lines and an absolute value of the difference are calculated by a comparing circuit. Either the clamp level of each line or the clamp level updated every (+1) or (-1) is selected by a selector in accordance with whether the absolute value of the difference of the clamp levels between the front and rear lines lies within a predetermined range or not. The clamp level which is outputted from the selector is subtracted from the output of the CCD image pickup device".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pritham Prabhakher whose telephone number is 571-270-1128. The examiner can normally be reached on M-F (7:30-5:00) Alt Friday's Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571)272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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